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| 10/757,388      | 01/15/2004  | Takeshi Kobayashi    | 61282-055           | 4950             |

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600 13th Street, N.W.  
Washington, DC 20005-3096

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| EXAMINER |
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NGUYEN, DINH P

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| ART UNIT | PAPER NUMBER |
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2893

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06/16/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/757,388

**Applicant(s)**

KOBAYASHI ET AL.

**Examiner**

DILINH P. NGUYEN

**Art Unit**

2893

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3-10, 19-26, 32 and 33 is/are pending in the application.
- 4a) Of the above claim(s) 21-26 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 and 4-10 is/are allowed.
- 6) ☒ Claim(s) 19, 20, 32 and 33 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first conductor layer covers an entire inner wall of the groove portion through a buffer layer (claim 3) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Response to Amendment***

2. The amendment filed 2/19/09 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the first conductor layer covers an entire inner wall of the groove portion through a buffer layer (claim 3).

Applicant is required to cancel the new matter in the reply to this Office Action.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The phrase: "the first conductor layer covers an entire inner wall of the groove portion through a buffer layer" is not described in the specification.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 19-20 and 32-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamada et al. (U.S. Pat. 6441502).

Yamada et al. disclose a semiconductor device (fig. 10C) comprising:

a semiconductor chip 31;

a multi-layer lead connection 58 (fig. 10C, column 7, lines 30-33) connected to the semiconductor chip 31 and having a first conductor layer (an outer most layer of multi-layer lead connection 58) (fig. 10, column 7, lines 30-33);

a piece of sealing resin 37, wherein a portion of the reverse face of the multi-layer lead protrudes from a principal plane of the piece of sealing resin 37, the first conductor layer (an outer most layer of multi-layer lead connection 58) (fig. 10C, column 7, lines 30-33) covering an entire surface of the portion and including a part within an enclosed groove of the piece of sealing resin 37,

wherein the multi-layer lead 58 contacts a surface of the semiconductor chip 31, and a part of the multi-layer lead except the portion of the multi-layer lead protruding from the principal plane of the piece of the sealing resin is sealed within the piece of the sealing resin 37 (a top surface of the lead connection 58 is sealed within the piece of the sealing resin) (fig. 10C).

Regarding claim 20, Yamada et al. disclose that the multi-layer lead 58 further including: a second conductor layer laminated inside the first conductor layer; and a third conductor layer formed inside the second conductor layer (fig. 10C, column 7, lines 30-33).

Regarding claim 32, Yamada et al. disclose that wherein a surface of the first conductor layer (the outer most layer of multi-layer lead connection 58) (fig. 10C, column 7, lines 30-33) facing away from the semiconductor chip 31 is uncovered (fig. 10C).

Regarding claim 33, Yamada et al. disclose that wherein the multi-layer lead 58 is in direct contact with a surface of the semiconductor chip 31 (fig. 10C).

### ***Claims Allowed***

Claims 1 and 4-10 are allowed (see the reason for allowance in the previous office action)

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Response to Arguments***

Applicant's arguments filed 2/19/09 have been fully considered but they are not persuasive.

The applicant argues that Yamada et al. do not disclose a part of the multi-layer lead except the portion of the multi-layer lead protruding from the principal plane of the piece of the sealing resin is sealed within the piece of the sealing resin.

Applicant's arguments have been fully considered but they are not persuasive because Yamada et al. disclose that a part of the multi-layer lead except the portion of the multi-layer lead protruding from the principal plane of the piece of the sealing resin

is sealed within the piece of the sealing resin 37 (a top surface of the lead connection 58 is sealed within the piece of the sealing resin) (fig. 10C).

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **DILINH P. NGUYEN** whose telephone number is (571) 272-1712. The examiner can normally be reached on 9:00 AM - 6:30 PM (Monday-Thursday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Davienne Monbleau can be reached on (571) 272-1945. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DLN

6/10/09

/Davienne Monbleau/  
Supervisory Patent Examiner, Art Unit 2893